TRIADIC LEARNED HELPLESSNESS

MED-STATE NOTATION™ PROCEDURE

SOF-700RA-12 Manual
DOC-028
Rev. 1.3

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CHAPTER 1
Introduction

The purpose of this manual is to give an explanation of the MED State Notation™ Procedures that comprise the SOF-700RA-12 Triadic Learned Helplessness Procedures. The files in this package can be found on the disk provided by MED Associates, Inc.

These procedures are intended to be run in MED Associates MED-PC® IV software. The latest version of MED-PC® IV gives researchers the ability to use pre-programmed procedures such as these to make hardware control and data collection easy. These pre-programmed procedures can also be modified to meet the evolving demands of a research protocol. Again, it is the intent of this manual to explain exactly what these procedures implement, and provide guidance into how to interpret what the program code achieves in order to let the user determine how to modify them to match their research protocol demands. The manual provides some examples of editing and modifying the procedure's programming code. The manual also defines the elements in the raw data file produced by these procedures.

In addition to this manual, refer to the **MED-PC® IV User's Manual** for the installation of the MED-Associates interface drivers, the MED-PC IV Software, and the Delphi® Compiler. Also refer to the User's Manual for instructions on developing a Hardware Configuration. Data file structure, file-saving format, and other related options are also determined by the Hardware Configuration. Running the Hardware Configuration software utility that accompanies MED-PC IV sets the Hardware Configuration. Its purpose is to assign the inputs and outputs on the interface cards in the interface cabinet for each task controlled by MED-PC IV. The particular type of interface card that is supplied in the interface cabinet may vary; please refer to the User's Manual provided for instructions on how to configure the type of card that is in the cabinet. A valid Hardware Configuration must exist in order for MED-PC IV to interface correctly with the MED Associates, Inc. hardware. This means that one should take the time to create a valid Hardware Configuration before attempting to run the procedures included in this package.

Should there be any problems, the staff at MED Associates, Inc. is available to answer any questions that may arise. Please e-mail us at support@med-associates.com with a detailed description of the problem or desired goals so that concise and detailed information may be provided.

The Triadic Learned Helplessness procedures are designed to be as easy to use as possible. MED Associates, Inc. understands that researchers do not have the time to devote to programming and hardware design, and for that reason, we have undertaken that burden for you. We sincerely hope that you are satisfied with the products and services we provide, and look forward to meeting your future experimental needs as your research program evolves.

Overview of the Procedures

The Triadic Learned Helplessness programs are designed to run three animals at the same time. Subjects in the Escape condition learn to turn the response wheel to terminate the aversive stimulus for themselves and a Yoked partner. The Control subject is not stimulated.

Triadic.mpc

When the program loads, the left position is set to Escape, the center to Control, and the Right to Yoke. If the system has aversive stimulators on all three positions, the code may be modified to randomly select which positions (left, center, or right) are the Escape, Yoke, and Control.

Figure 1.1 - Triadic System Positions

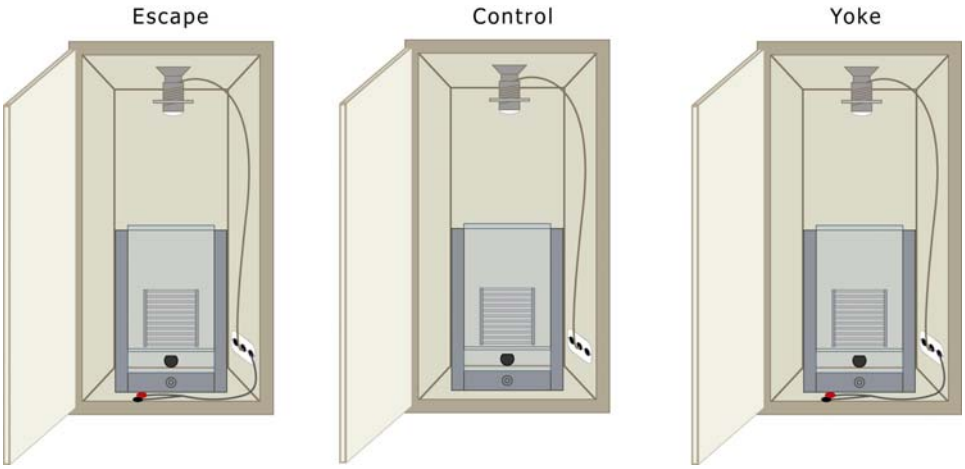


Table 1.1 - Default Variable Values

Variable	Default Value
Trials to Run (maximum value 142)	100
Left (Escape = 1; Yoke = 2; Control = 3)	1
Center (Escape = 1; Yoke = 2; Control = 3)	2
Right (Escape = 1; Yoke = 2; Control = 3)	3
Response Time (seconds)	5
FR1 Increment Ratio Count	3
Max Shock Time (seconds)	30
Session Time (minutes)	360
SoftCR Data Array (Yes = 1; No = 0)	1

The program starts with an FR-1 schedule. The default Response Time is set to 5 seconds. The FR-1 schedule must be met the number of times specified by the FR1 Increment Ratio Count (default of 3) before the FR value is incremented. The FR-1 must also be met within the Response Time or the counter resets.

Once the FR-1 schedule is met the number of times specified by the FR1 Increment Ratio Count variable, the FR schedule will increment by one every time the schedule is met within the Response Time. If the schedule is not met within the Response Time, the FR value does not increment. If the aversive stimulus is left on for the Max Shock Time, the FR value is reset to 1 and the FR1 Increment Ratio Count must be satisfied again before the FR value will increment.

The maximum FR value is 16. Once the FR value reaches 16, it will stay at 16 as long as the FR 16 schedule is met within the Response Time. If the schedule is not met within the Response Time, the schedule is decremented by one.

The aversive stimulus duration on each trial depends on the latency at which the Escape subject meets the wheel turn criterion. The maximum aversive stimulus time is 30 seconds.

The subjects in the Escape and Yoked positions receive aversive stimuli with an average inter-stimulus interval of 60 seconds. The inter-stimulus interval ranges from 30 to 90 seconds, in five- second intervals. This may be modified by changing the values in List V. Refer to the **Modifying the MedState Notation Code** section.

The session ends when the number of Trials to Run is completed or the Session Time is over, whichever happens first. If the session should continue through the last trial regardless of the amount of time it takes, simply set the session time to some excessive value, such as 999. The maximum number of trials that can be run is 142 due to the size of the “B” array; however, this can be easily changed to accommodate additional trials.

The B-Array is used to store trial data. There are seven columns of data for each trial. The first column is the trial number. This is followed by the left, center, and right response counts. The last three columns are the time to meet FR, the FR value, and the ITI value.

The SoftCR Pro data array is activated by default (set to 1). The responses on each wheel are recorded as steps 1 (left), 2 (center), and 3 (right). The aversive stimulus is recorded as event zero.

Triadic2.mpc

The Triadic2.mpc procedure is identical to the Triadic.mpc procedure in every way except for the way that the FR schedule is incremented.

Once the FR-1 schedule is met the number of times specified by the FR1 Increment Ratio Count variable, the FR schedule will doubled every time the schedule is met within the Response Time, rather than increased by one. The maximum FR value is 16.

CHAPTER 2
Getting Started

Software Installation

Please refer to the **MED-PC IV User's Manual** for a complete guide to installing the MED-PC IV software, building a valid Hardware configuration with the Hardware Configuration utility, and opening and compiling a MSN procedure in the Trans-IV utility.

To install the Triadic Learned Helplessness Procedures, insert the CD into the CD-ROM drive and click **Install the Triadic Software**. The Triadic procedures are copied into the C:\MED-PC IV\MPC folder.

Backing Up the Software

Med Associates strongly encourages creating backup copies of the programs in case of disk failure. Having copies of the original programs may be useful in the future should modifications be made to the existing programs.

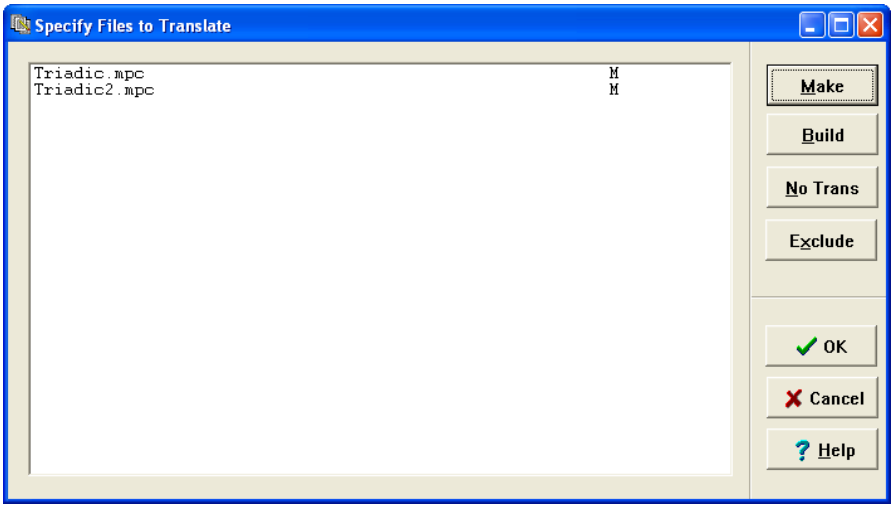
CHAPTER 3
Beginning & Running an Experiment

Translating the MED-PC IV (.mpc) File

Programs written in MedState Notation must be translated using Trans IV before they can be executed in this application. Be sure that a copy of the file being translated is present in the directory "C:\MED-PC IV\MPC\." Open Trans IV icon and select **Translation** | **Translate and Compile**.

Select the program(s) to use for the experiment and click **Make**. Click **OK** to start the translator, and it will automatically parse the MedState Notation and then open to a DOS screen to compile the Pascal code. Depending on the speed of the computer, each of these steps may not be seen. If any problems are encountered during this process, refer to the on-screen help menu or the **MED-PC Version IV User's Manual**, or contact MED Associates, Inc. for assistance.

Figure 3.1 - Trans IV Control Panel for Translating and Compiling MedState Notation Code



Using the MED-PC IV Load Wizard

MED-PC IV is designed to help the researcher run an experiment by guiding selection choices through its Experiment Loading Wizard. This section will describe how to initiate the Triadic.mpc application, however the following steps that will also apply to all other .mpc procedures.

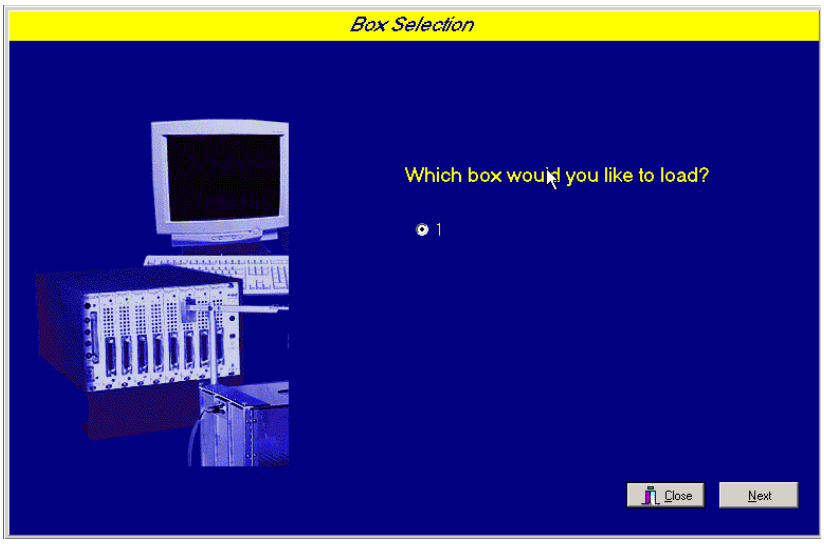
Open MED-PC IV and the MED-PC Experiment Loading Wizard's Welcome screen, shown in Figure 3.2 will appear.

Figure 3.2 - The MED-PC IV Loading Wizard Welcome Screen

To avoid this load wizard, deselect the checkbox labeled **Run this experiment automatically when starting MED-PC**. Close this screen by clicking the **Close** button. Closing this screen immediately reveals the MED-PC Run-Time Screen shown in Figure 3.9. If the choice to continue with the Loading Wizard is made, then click the **Next** button.

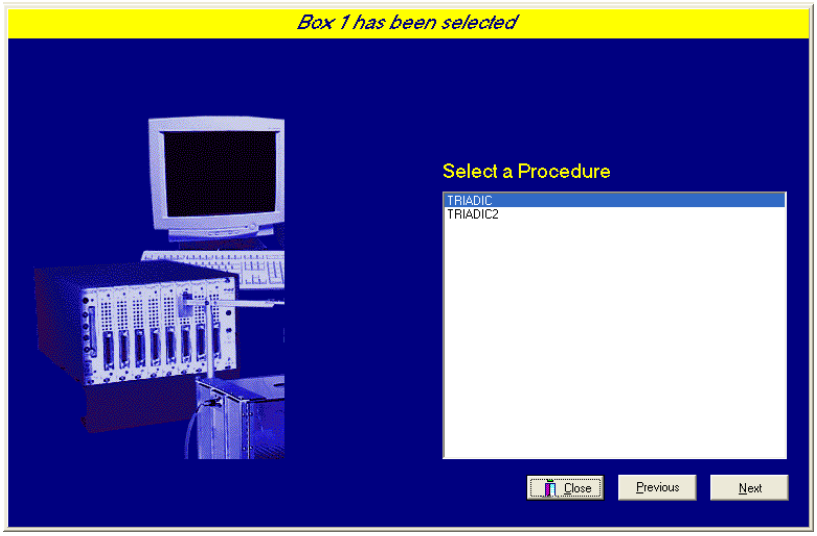
The Box Selection screen will appear next, as shown in Figure 3.3. From this screen the researcher chooses which boxes will be used in the experiment. Select the boxes that will run the experiment by clicking in the radio button next to the box number. The figure shows that the Hardware Configuration included only 1 box, which was selected. Click **Next** to continue.

Figure 3.3 - The Box Selection Screen



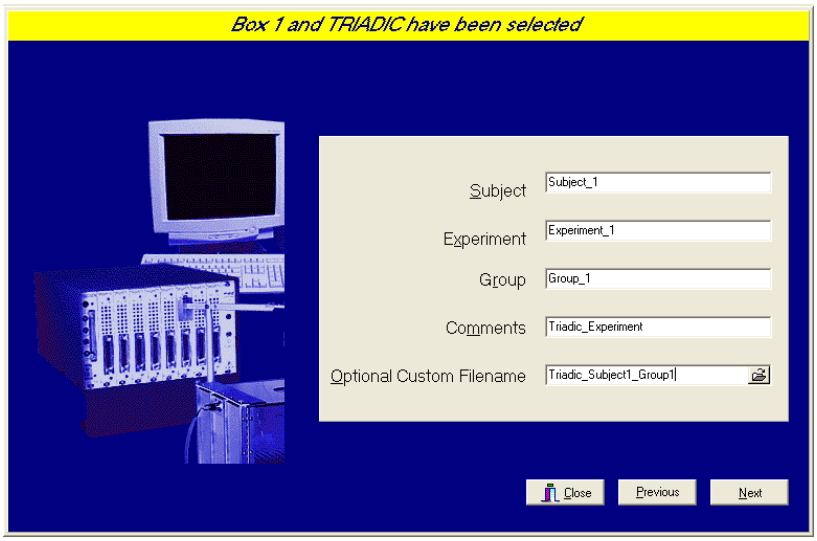
The Select a Procedure screen appears next, as seen in Figure 3.4. This is where the application to be run is selected. The screen displays a list of all the currently compiled procedures. Select the desired procedure and then click **Next**.

Figure 3.4 - The Select a Procedure Screen



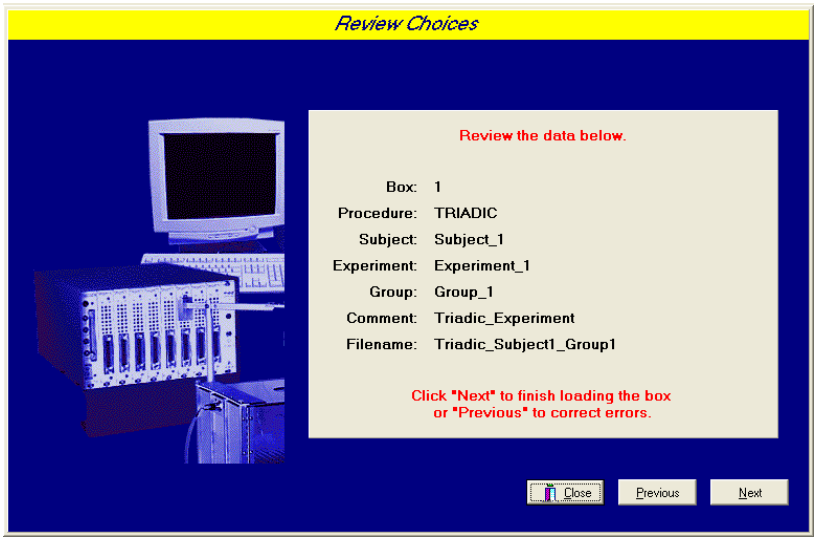
The Enter Experiment Data Screen should display next, as shown in Figure 3.5. The purpose of this screen is to allow annotations to be added to the data file that is produced by MED-PC IV. These annotations will help identify the Subject, Experiment, and Experiment Group upon which data was collected. Comments can be added here as well, and the data file can be given a customized file name to help identify it from other data files. Enter the information desired, and click **Next**.

Figure 3.5 - Enter Experiment Data Screen



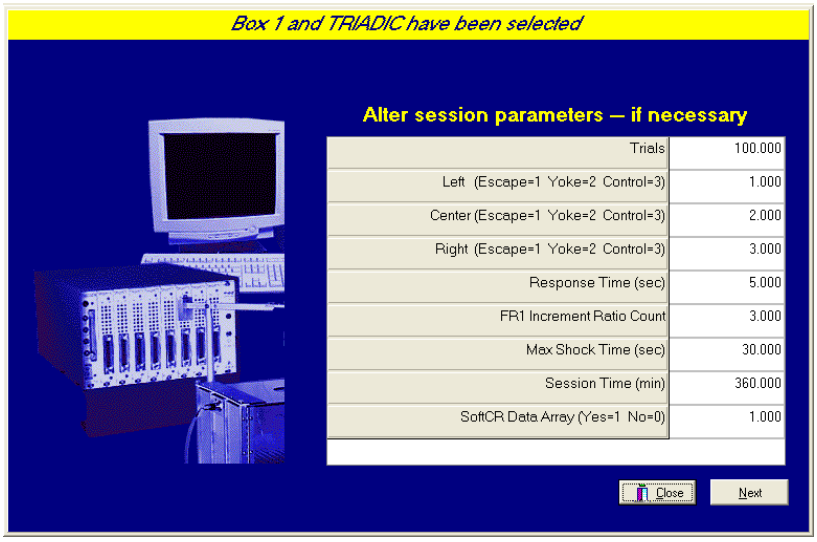
The next screen to appear is the Review Choices screen, as seen in Figure 3.6. This is a method of confirming that the information received from the Box/Procedure Selected is correct. If it is not correct, select **Previous**, and edit the data. If it is correct, select **Next**.

Figure 3.6 - Review Choices Screen



The Alter Session Parameters Screen, shown in Figure 3.7, is the next screen to appear, and is an important screen for the researcher. The Alter Session Parameters screen allows the researcher to alter the parameters by which a procedure executes. The Send Start Command Screen appears next. The options available on the screen vary depending upon how many boxes are described in the Hardware Configuration.

Figure 3.7 - Alter Session Parameters Screen



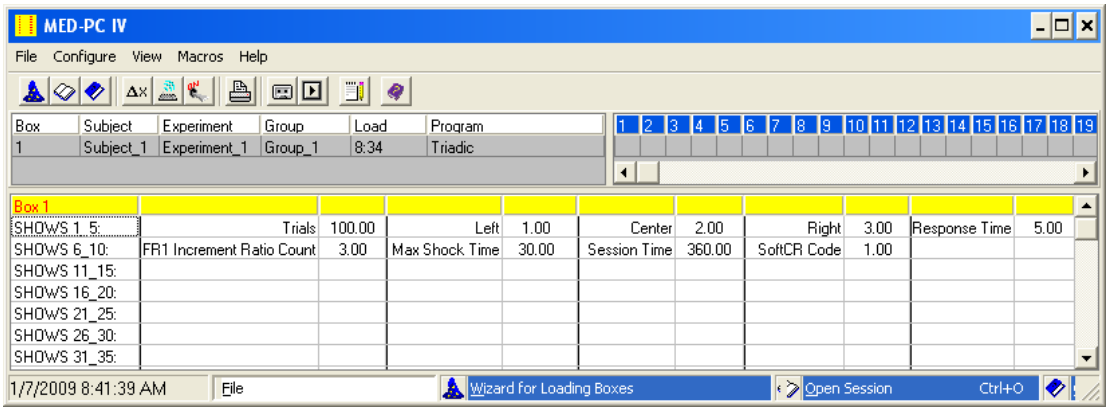
In this example only 1 box is described in the Hardware Configuration, so Figure 3.8 will appear next. If more than 1 box is in the Hardware Configuration, then Figure 3.9 will appear.

Figure 3.8 - Send Start Command Screen for Single Box Configuration

Figure 3.9 - Send Start Command Screen for Multiple Box Configuration

In both cases (Figure 3.8 and Figure 3.9), the screens are where the researcher decides to either load more boxes, send a start signal to boxes that are already loaded, or enter the MED-PC IV run-time environment without sending a start signal by selecting "I am finished with the wizard". This option results in the screen shown in Figure 3.10.

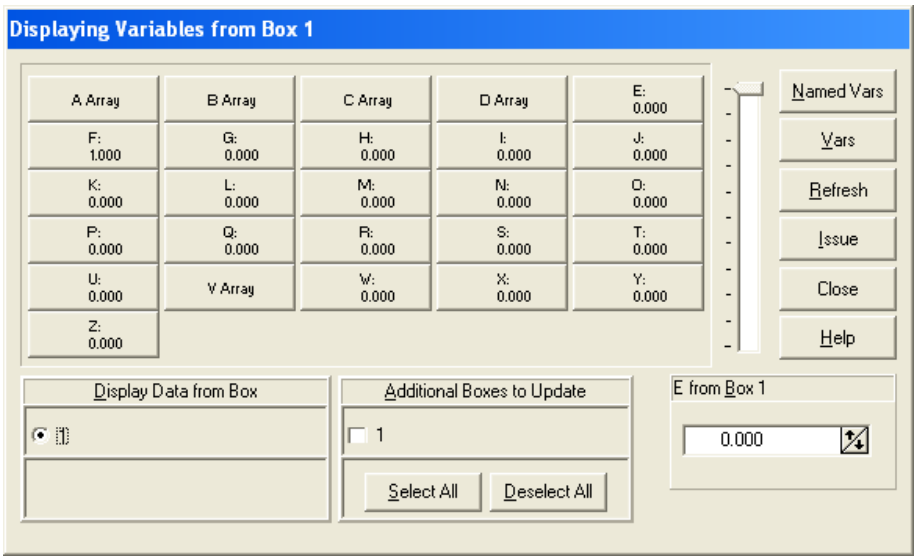
Figure 3.10 - The MED-PC IV Run-Time Screen



Viewing/Changing Variable Values

Before a "start command" has been issued, any variable may be changed on the MED-PC IV run-time screen. Simply highlight the value to change, and then enter the new value. Once a session is in progress, change variables by selecting **Configure | Change Variables**, or click the 4th tool bar item **ΔX**. In the lower left hand corner of the Change Variables window, find the "Display Data from Box" display, and choose the chamber(s) to modify. By clicking additional boxes in the "Additional Boxes to Update" section, changes made to a single box are automatically loaded to all of the selected boxes.

Figure 3.11 - Changing Variables Screen



The value of any simple variable may be viewed from this screen by clicking an array on the table and each element in that array can be viewed, as shown in Figure 3.12. To change a value, simply highlight and replace the value in the lower right hand box or use the up/down arrows to increment by 1. Click the **Issue** button for the change to take effect. Click **Named Variables** to produce the display in Figure 3.13. Change variables here as needed.

Figure 3.12 - Displaying Array A from Box 1

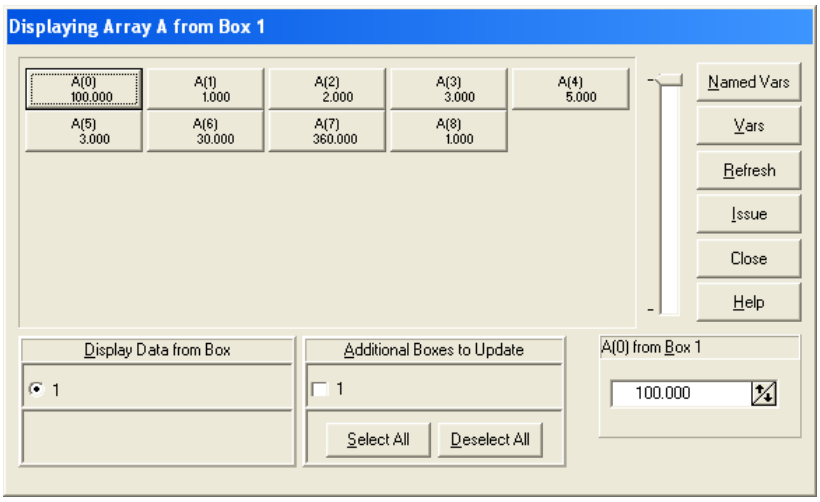
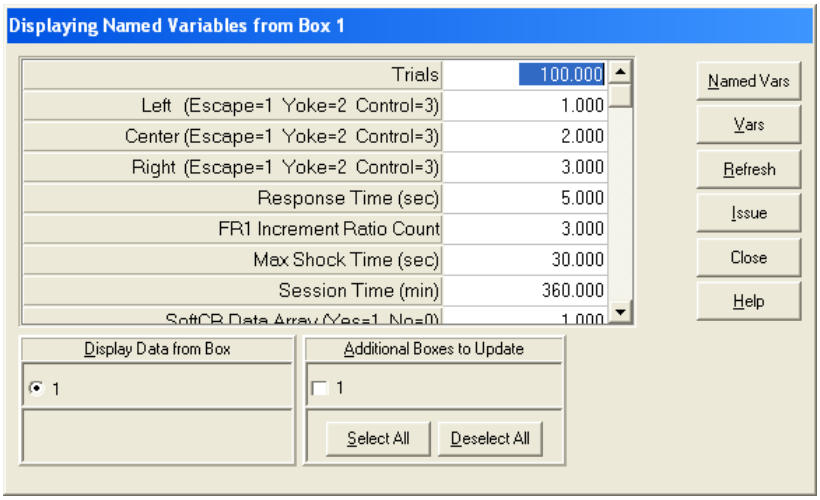


Figure 3.13 - Displaying Named Variables from Box 1

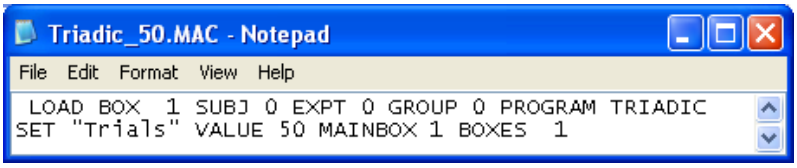


Macros

The simplest way to initially create a macro is to record keyboard functions while performing the steps manually. Once the commands are in the macro, it is easy to create a number of macros with the macro editor. The following example illustrates the process of loading "Box 1" and changing the Trials to Run to 50.

To begin, open MED-PC IV and going directly to the run time screen. Close the load wizard, if present. Before loading or opening the procedure, click **Macro** on the main menu and select **Turn On Macro Recorder** or click the 8th tool bar item with the cassette tape icon on top. A note on the bottom of the display indicates that the recorder is running. Open "Triadic.mpc" by clicking **Files | Open Session**. Change the variables using any of the methods described above. When all settings have been made, turn the recorder off again by using the main menu or tool bar. Save the macro with a distinctive name. The example in Figure 3.14 was named "Triadic_50.mac" since the Trials to Run was changed to 50.

Figure 3.14 – Triadic_50.mac

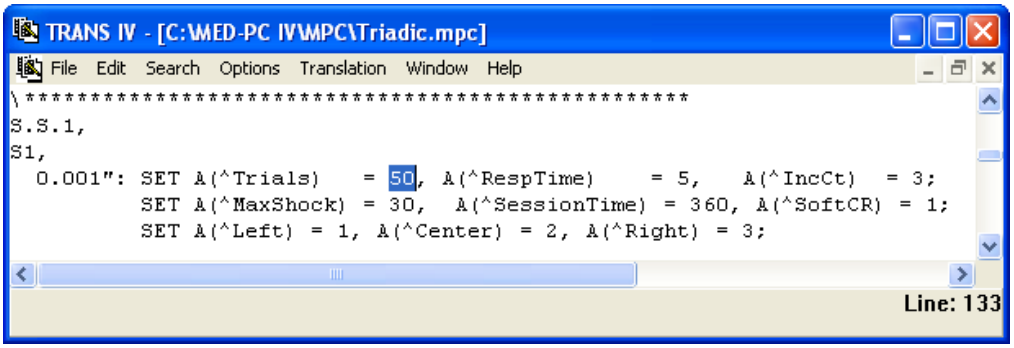


Once this macro is built, use the macro editor to make simple changes such as replacing reward or correct lever values. Review the Help file on screen or the **MED-PC IV User's Manual** for more information on macros and the features offered. A START command or message box followed by a START command could be added to the macro (it was left off here so changes could be verified before starting the procedure).

Modifying the MedState Notation™ Code

Permanent changes to the Triadic procedures can be made to the MedState Notation code. To make the same change to the Trials to Run as shown above, do the following. Open Trans IV and select **File** | **Open** to place Triadic.mpc into the text editor. Scroll down to approximately line 133 (note the line counter in the lower right hand corner of the editor) to reveal the code shown in Figure 3.15.

Figure 3.15 – Triadic.mpc Line 133



Change A(^Trials) =100 to A(^Trials) =50 and save the changes with the same or a new file name such as Triadic_50Trials.mpc. Remember, if creating a new .mpc file name and are using a macro to load boxes, the file name in the macro also must be changed. Translate and compile the new or changed file as described previously and run MED-PC IV. Use the "Change Variables" screen to view/confirm the new values.

CHAPTER 4
Understanding the Data Files

Unless otherwise specified, data will be saved to C:\MED-PC IV\DATA. Data can be saved manually by selecting **FILE | SAVE DATA MANUALLY** or **FILE | SAVE DATA (FLUSH)**. The file name that is used to save the data in depends on the option that was chosen in the Hardware Configuration Utility and may also be dependent on the Subject, Experiment, and Group name provided in the MED-PC IV load wizard. Within each data file, the headings are created for each Subject, Experiment, Group, Box, etc., (see below). Data files may be opened with note pad, word pad, or any word processor or spreadsheet; however, be sure they are always saved "unformatted" in case a data extraction utility such as MED-PC to Excel might ever be used. Data file formats are explained in detail in the **MED-PC IV User's Manual**.

Sample Data File

Select **Annotated** on the file options page during hardware installation to produce a raw data file similar to the following. Data files are located in C:\MED-PC IV\Data\ unless an alternate path was defined during hardware installation. They may be opened with note pad, word pad, or any word processor; however, make sure they are always saved unformatted in the occasion a data extraction utility such as MPC2XL is used. The header information should be self-explanatory. Data-file formats are explained in detail in the **MED-PC IV User's Manual**.

```
File: C:\MED-PC IV\DATA\!2008-04-12_15h23m.Subject 0

Start Date: 04/12/08
End Date: 04/12/08
Subject: 0
Experiment: 0
Group: 0
Box: 1
Start Time: 15:23:48
End Time: 15:31:53
MSN: Triadic
E:       1.000
F:       5.000
G:       0.000
H:      42.000
I:      25.000
J:    3154.000
K:     458.000
L:       3.000
M:      31.000
N:       3.000
O:       0.000
P:       0.000
Q:       0.000
R:       0.000
S:       4.000
T:       7.000
U:       0.000
W:      75.000
X:       0.000
Y:       2.000
Z:       0.000
```

```
A:
  0:   100.000     1.000     2.000     3.000     5.000     3.000    30.000
  7:   360.000     1.000
B:
  0:     1.000     1.000     0.000     0.000     1.000     1.000    80.000
  7:     2.000     1.000     0.000     0.000     1.540     1.000    55.000
 14:     3.000     1.000     0.000     0.000     0.990     1.000    85.000
 21:     4.000     2.000     5.000     0.000     0.800     2.000    90.000
 28:     5.000     4.000     0.000     0.000     0.790     3.000    45.000
 35:     6.000     8.000     0.000     0.000     1.630     4.000    65.000
 42:     7.000     0.000     0.000     0.000     0.000     0.000    75.000
C:
  0:  8001.600   101.110  5656.110  8601.110   607.120     0.500    55.120
  7:   129.120    76.120    82.120  8052.600    55.110    26.110    26.110
 14:  4511.110    22.110    22.110    18.110  6437.110    17.110    25.110
 21:    24.110    26.110    27.110    91.110
D:
  0:     1.000     2.000     3.000
V:
  0:    30.000    35.000    40.000    45.000    50.000    55.000    60.000
  7:    65.000    70.000    75.000    80.000    85.000    90.000
```

Breakdown of Sample Data File - Simple Variables

The following simple variables are shown immediately following the header information:

```
E:       1.000    /Escape location or Escape wheel; assigned to Left here
F:       5.000    /Fixed Ratio Value
G:       0.000    /Not used
H:      42.000    /Subscript for the Trial Data
I:      25.000    /Subscript for the IRT Array C
J:    3154.000    /Elapsed time in 0.01 sec increments for SoftCR Pro Data
K:     458.000    /Elapsed Time in Session in seconds
L:       3.000    /Loop counter for FR1
M:      31.000    /Time in FR
N:       3.000    /Number of Control Locations (one control wheel in this case)
O:       0.000    /Not used
P:       0.000    /Not used
Q:       0.000    /Not used
R:       0.000    /Responses
S:       4.000    /Shock timer
T:       7.000    /Trial Number
U:       0.000    /Not used
W:      75.000    /Current Trial's ITI
X:       0.000    /Not used
Y:       2.000    /Yoke Location
Z:       0.000    /Not used
```

Breakdown of Sample Data File - Arrays

The arrays are presented in rows of 7 elements each. The first row begins with element 0 and ends with element 6; the second row begins with element 7 and ends with element 13, etc. Each row begins with an element marker followed by a colon, 0:, 7:,14:, 21:, etc. The size of Array C was set to 10000 with the DIM command, which means that Array C was defined for 10001 data points. Under MED-PC Version IV, this array may be enlarged up to 1 million elements; however, 10,000 was felt to be adequate for this application. An end of array seal -987.987 will limit the saved file to only those elements used during the running of the procedure.

Each array has been defined in the comments section at the beginning of the .mpc file. That information was used to add the following labels to each array. The lines were expanded to make room for the labels. See MPC2XL for producing labeled data files with all or just some of the information below.

Array A

Array A contains the control variable values. The values are preset to default values in State Set 1, State 1. They are displayed as named variables and can be changed by any of the methods described previously. Once a session is started these values should not be changed to ensure the integrity of the experiment.

```
A:
     0:   100.000     1.000     2.000     3.000     5.000     3.000    30.000
     7:   360.000     1.000
```

Array A with Labels

	A(0)	A(1)	A(2)	A(3)	A(4)	A(5)	A(6)
Row Marker	Trials	Left	Center	Right	Response Time	FR1 Incr.Ratio Count	Max. Shock Time
0:	100.000	1.000	2.000	3.000	5.000	3.000	30.000

	A(7)	A(8)
Row Marker	Session Time	Soft CR Data Array
7:	360.000	1.000

Array B

Array B is used for the trial data variables that may change as the session runs. Elements for Correct Responses, Incorrect Response and Total Responses will be incremented according to animal's responses as session runs.

```
B:
     0:     1.000     1.000     0.000     0.000     1.000     1.000    80.000
     7:     2.000     1.000     0.000     0.000     1.540     1.000    55.000
    14:     3.000     1.000     0.000     0.000     0.990     1.000    85.000
    21:     4.000     2.000     5.000     0.000     0.800     2.000    90.000
    28:     5.000     4.000     0.000     0.000     0.790     3.000    45.000
    35:     6.000     8.000     0.000     0.000     1.630     4.000    65.000
    42:     7.000     0.000     0.000     0.000     0.000     0.000    75.000
```

Array B with Labels

	B(0)	B(1)	B(2)	B(3)	B(4)	B(5)	B(6)
Row Marker	Trial Number	Left Response Count	Center Response Count	Right Response Count	Time to meet FR	FR Value	ITI Value
0:	1.000	1.000	0.000	0.000	1.000	1.000	80.000
7:	2.000	1.000	0.000	0.000	1.540	1.000	55.000
14:	3.000	1.000	0.000	0.000	0.990	1.000	85.000
21:	4.000	2.000	5.000	0.000	0.800	2.000	90.000
28:	5.000	4.000	0.000	0.000	0.790	3.000	45.000
35:	6.000	8.000	0.000	0.000	1.630	4.000	65.000
42:	7.000	0.000	0.000	0.000	0.000	0.000	75.000

Array C

Array C contains summary information for SoftCR Pro. The value of every variable conforms to the Data Element Format described. Please refer to the S**oftCR Pro User's Manual** and Chapter 5 of this manual for more information.

```
C:
     0:     8001.600   101.110  5656.110  8601.110   607.120     0.500    55.120
     7:      129.120    76.120    82.120  8052.600    55.110    26.110    26.110
    14:     4511.110    22.110    22.110    18.110  6437.110    17.110    25.110
    21:       24.110    26.110    27.110    91.110
```

Array C with Labels

	C(0)	C(1)	C(2)	C(3)	C(4)	C(5)	C(6)
Row Marker	Set Event Pen to Level 1	Response on Left Wheel	Response on Left Wheel	Response On Left Wheel	Response on Center Wheel	Set Event Pen to Level 0	Response on Center Wheel
0:	8001.600	101.110	5656.110	8601.110	607.120	0.500	55.120

	C(7)	C(8)	C(9)	C(10)	C(11)	C(12)	C(13)
Row Marker	Response on Center Wheel	Response on Center Wheel	Response on Center Wheel	Set Event Pen to Level 1	Response on Left Wheel	Response on Left Wheel	Response on Left Wheel
7:	129.120	76.120	82.120	8052.600	55.110	26.110	26.110

	C(14)	C(15)	C(16)	C(17)	C(18)	C(19)	C(20)
Row Maker	Response on Left Wheel	Response on Left Wheel	Response on Left Wheel	Response on Left Wheel	Response on Left Wheel	Response on Left Wheel	Response on Left Wheel
14:	4511.110	22.110	22.110	18.100	6437.110	17.110	25.110

	C(21)	C(22)	C(23)	C(24)
Row Maker	Response on Left Wheel	Response on Left Wheel	Response on Left Wheel	Response on Left Wheel
21:	24.110	26.110	27.110	91.110

Array D With Assigned Values

The sample data file contains the D array with assigned session type values. This array is declared with LIST command on line 105 of Triadic.mpc file. It is only used if the random selection of the positions is enabled in the MedState Notation code. Every sample file will contain this array with the same values.

```
D:
     0:        1.000        2.000        3.000
```

Array V With Assigned Values

The sample file contains the V array with assigned inter-trial interval values in seconds. This array is declared with LIST command on line 106 of Triadic.mpc file. Every sample file will contain this array with the same values.

```
V:
     0:    30.000    35.000    40.000    45.000    50.000    55.000    60.000
     7:    65.000    70.000    75.000    80.000    85.000    90.000
```

CHAPTER 5
SoftCR Pro

Each Triadic procedure stores IRT data in array C that may be used by the SoftCR Pro Cumulative Recorder program to generate a graphical record on screen or to print a Cumulative Record after the data has been collected. Each element in this "Cumulative Record" data array consists of two components. The integer value or value to the left of the decimal point is the time component. The decimal value or value to the right of the decimal point is a SoftCR Pro code component.

Time Components

Time components may be Relative or Absolute. In a Relative file, the time component of a given data element is equal to the elapse time since the previous element. In an Absolute file, it is equal to the elapse time since the beginning of the Record. The elements used in Triadic are all Relative with a resolution of 0.01 seconds (10 milliseconds). For example, if array C contained just two elements 350.1 and 330.1, the record would consist of one Response Step at 3.5 seconds (350 * 0.01) and a second Response Step 3.3 seconds later at 6.8 seconds on the X-Axis.

Control Code Components

The control code component indicates whether the element is a Response Step, Reinforcement Pip, Pen Reset, Event Pen Up, or Event Pen Down element. Up to 10 Event Pens (0 - 9) and 10 Trace Pens (0 - 9) may be specified in MED-PC. In addition, Resets may be made with the Pen "Up" (no vertical tracing) or "Down." Additional coded information may be possible in the future.

Data Element Format

Each data element must conform to the following format:

nnnnn.xyz

Where:

nnnnn = Time Component

xyz = Control Code Component

x = Datum Type

y = Datum Index

z = Don't Care Digit

NOTE: If there are more then three numbers past the decimal point, then the array will be considered invalid and will be ignored by SoftCR Pro.

Allowed datum types and indices are:

nnnnn.1yz = Response
y=Response Location
1=Left Wheel
2=Center Wheel
3=Right Wheel

nnnnn.2yz = Reinforcement

nnnnn.3yz = Reset Pen
y=Pen Mode, where
0=Pen Up During Reset
1=Pen Down During Reset

nnnnn.4yz = Unused

nnnnn.5yz = Set Event Pen To Level 0 ("down" or at baseline), where
y=Event Pen Number (0-9)

nnnnn.6yz = Set Event Pen To Level 1 ("up"), where
y=Event Pen Number (0-9)

nnnnn.7yz = Unused

nnnnn.8yz = Unused

nnnnn.9yz = Unused

Data in the array being plotted that does not conform to the above rules will be ignored.